



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,116	11/18/2003	Bulent M. Basol	NT-021D-US	6101
20995	7590	01/31/2006	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			DEO, DUY VU NGUYEN	
			ART UNIT	PAPER NUMBER
			1765	
DATE MAILED: 01/31/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/716,116	Applicant(s) BASOL ET AL.	
	Examiner DuyVu n. Deo	Art Unit 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/16/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 8-11, 14-16, 18, 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller et al. (US 5,876,266).

Miller describes a system for removing a first material, such as metal, located on a top surface of a workpiece comprising: a pad position proximate to the workpiece so that the front surface of the pad contacts the exposed surface of the first material, the pad comprising a second material, microcapsules, which contains oxidizing and reducing agents, ammonium compounds, or slurry (col. 1, line 14-26, 45-48; col. 3, line 40-45; col. 7, line 21-32; col. 8, line 59-67; col. 9, line 16-33); a rotating platen 62 for rotation by a drive motor 64 for mechanically moving the pad front surface against the exposed surface of the first material, this would initiate a chemical reaction between the first material and the second material to yield a reaction product (col. 3, line 35-45-col. 8, line 65-col. 9, line 15); a chemical solution to remove the reaction product and not substantially attacking other materials involved in the process (col. 1, line 59-65; col. 2, line 40-52), this would read on claimed the first and second material not being substantially soluble into the chemical solution. Figure 2 shows the pad has the second material, microcapsules, on the surface. This would read on claimed at least a portion of the front surface of the pad comprising a second material prior to contact between the front surface of the pad and the first material.

Art Unit: 1765

The apparatus further include a wafer carrier or holder to produce a relative motion between the pad and the workpiece (col. 1, line 50-55; col. 3, line 23-35).

Referring to claims 10, 11, 18, 19, the pad further comprises of abrasives, and other chemical agents that would capable of removing or dissolve the reaction products (col. 7, line 21-33).

Referring to claims 14-16, the workpiece holder can rotate, have transverse movements or vertical or lateral movements (fig. 1; col. 3, line 22-35); therefore, it would be capable to vibrate without contacting the pad and maintain a distance between the workpiece surface and the pad. Since the workpiece is not in contact with the pad, it would stop the chemical reaction between the first material and the material on the pad.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller as applied to claim 9 above, and further in view of Kaufman et al. (US 5,954,997).

Unlike claimed invention, Miller doesn't describe the metal layer on the workpiece is copper. However, copper is known to one skilled in the art at the time of the invention for forming integrated circuit as shown here by Kaufman. The copper is polished by CMP (ab.; col. 3, line 1-col. 4, line 9). It would have been obvious to one skilled in the art at the time of the

Art Unit: 1765

invention in light of Kaufman to polish the metal layer such as copper with Miller's system to form an integrated circuit with a reasonable expectation of success.

Response to Arguments

5. Applicant's arguments filed 11/16/05, with respect to the claimed rejection under 102(b) and 103(a), have been fully considered but they are not persuasive.

Applicant's argument that Miller teaches incorporating the microcapsules directly into the polishing pad but not on the surface of the pad is found unpersuasive. Please see figure 2 showings microcapsules A, B, C presented on the pad front surface. This would provide a pad having second material on the front surface prior to the contact between the pad front surface and the first material.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 1765

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n. Deo whose telephone number is 571-272-1462. The examiner can normally be reached on 6:00-2:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Primary Examiner

Duy-Vu N. Deo

1/25/06

